

REMARKS

Applicants have amended claims 91, 97, 102, 104 and 106 to incorporate the features of dependent claims 94, 100, 103, 105 and 107 respectively. Accordingly claims 94, 100, 103, 105 and 107 have been cancelled without prejudice or disclaimer. In addition, claims 60-74 have been cancelled. Cancelled claims will be pursued in a continuation application. No new matter is added with these amendments.

Applicants appreciate the courtesy extended to Applicants' representative during the after-final interview on July 21, 2004. During the interview, Applicants discussed the allowability of the claims, as amended herein, over the art of record and indicated an intention to provide the Office with a Declaration from one of the inventors, James Hakewill, corresponding the ARC Product to the pending claims to provide a nexus between the claims and the commercial success information provided in the Declaration of Peter Hutton. With this response and Request for Continued Examination, Applicants are providing that declaration and accompanying ARC documentation from the 1998-99 time frame. Those documents establish that the ARC Product has enjoyed commercial success due to the inclusion of the features recited in the pending claims.

Information Disclosure Statement Question (Paragraph 18 of Office Action)

In paragraph 18 of the Office Action, a date for Zanojnovic (the fifth document provided on the IDS in question) is requested. That date is believed to be 1998. A substitute PTO/SB/08A form listing a date of 1998 is enclosed for completeness of the record. An initialed copy of that form is requested with the next communication.

Rejection of Claim 12 Based on Alleged Indefiniteness

In paragraphs 26-28 of the Office Action, claim 12 is rejected under 35 U.S.C. § 112, second paragraph as allegedly being indefinite. Specifically, the Office Action questions the

difference between the prototype description and the extension logic description in the context of the phrase that states “library files that provide at least one prototype description and at least one extension logic description” Applicants assert that the claims as prepared are sufficiently clear. The specification clarifies that relevant library files (including at least one prototype description and at least one extension logic description) are identified. *See* Specification, Page 13 (explaining that the step of defining a library location includes copying files from a master database) and Page 15 (explaining that the files copies as part of defining the library location include prototype files). The page 16 section of the specification referenced by the Examiner simply further elaborates on the act of identifying library files related to extension logic descriptions. Accordingly, applicants assert that this rejection has been overcome with this clarification. If after further consideration, however, the Examiner seeks further clarification or consultation, please contact the undersigned to discuss a solution.

Rejections Based on Section 103

Paragraphs 29-185 of the Office Action set forth numerous different rejections of the various pending claims, all of which being based at least in part on U.S. Patent No. 6,324,678 to Dangelo (“Dangelo ‘678”). Specifically, the status of the claims is as follows:

Claim 12 stands rejected under 35 U.S.C. §103 as being allegedly unpatentable over Dangelo ‘678 and MPEP 2144.04(III).

Claim 13 stands rejected under section 103 as being allegedly unpatentable over Dangelo ‘678, MPEP 2144.04 (III) and Wirthlin ‘434 (U.S. Patent No. 6,173,434 to Wirthlin).

Claims 14-17 stand rejected under section 103 as being allegedly unpatentable over Dangelo ‘678, MPEP 2144.04 (III), Dupenloup ‘123 (U.S. Patent No. 6,378,123 to Dupenloup) and Dangelo ‘958 (U.S. Patent No. 5,801,958 to Dangelo).

Claims 18-22, 40 and 48 stand rejected under section 103 as being allegedly unpatentable over Dangelo '678 and Dupenloup '123.

Claims 41-42 stand rejected under section 103 as being allegedly unpatentable over Dangelo '678, Dupenloup '123 and Gupte (U. S. Patent No. 5,903,475 to Gupte).

Claim 47 stands rejected under section 103 as being allegedly unpatentable over Dangelo '678 in view of Gupte and Wirthlin '434.

Claims 60-62 and 64-74 stand rejected under section 103 as being allegedly unpatentable over Dangelo '678 in view of Wirthlin '434.

Claim 63 stands rejected under section 103 as being allegedly unpatentable over Dangelo '678 in view of Wirthlin '434 and further in view of Turino '892 (U.S. Patent No. 5,994,892),

Claim 75 stands rejected under section 103 as being allegedly unpatentable over Dangelo '678 in view of Gupte and MPEP 2144.04(III).

Claims 70-117 are allegedly rejected as containing the same limitations as claims 12-22, 40-42, 47-48 and 60-74, but Applicants clearly do not agree. In particular, but without limitation, claims 108-117 recite various text code generation elements that are not identically present in earlier claims. Other differences apply as well.

Applicants respectfully traverse these rejections for the reasons that follow.

Specifically, each of the pending independent claims clarifies various distinctions between those claims and the primary reference in each of these rejections - Dangelo '678. Moreover, Applicants assert that the secondary references utilized in each of these rejections fails to make up for the deficiency of Dangelo '678 as applied to the claim in question.

Claim 12 recites three acts as part of the method including "receiving one or more inputs from a user for at least one customized parameter of the integrated circuit; receiving an

identification of a location of one or more library files that provide at least one prototype description and at least one extension logic description for the integrated circuit for which a model is being generated; and generating through an automated process a customized description language model based on at least one customized parameter, the at least one prototype description, and the at least one extension logic description, the automated process including the acts of reading at least one prototype description and modifying the at least one prototype description by substituting values in the at least one prototype descriptions or merging additional descriptions based on the at least one customized parameter.” Those three acts are not disclosed by Dangelo. Rather, Dangelo ‘678 provides a system for a user to manually write hardware description language, but nothing in Dangelo ‘678 discloses or suggests “generating through an automated process a customized description language model based on at least one customized parameter, the at least one prototype description, and the at least one extension logic description” as claim 12 recites. Moreover, claim 12 further recites acts performed as part of generating the customized description language model as including “reading one or more prototype descriptions and modifying the one or more prototype description by substituting values in the one or more prototype description or merging additional descriptions based on the at least one customized parameter.” Dangelo ‘678 fails to disclose or suggest substituting values in a prototype description through an automated process or merging additional descriptions based on a customized parameter through an automated process.

The Office Action’s citation to the MPEP legal section fails to compel a finding of obviousness. Claims 12-17 do not recite steps that merely automate that which was manual. Rather, the recited acts provide improvement to the manner in which integrated circuit designs are developed either manually or automatically over that disclosed in Dangelo ‘678. Moreover,

the evidence of commercial success, which has been more fully developed through the submission of the Declaration of James Hakewill (the “Hakewill Declaration”) illustrates the non-obviousness of the claimed process over the art of record. For at least these reasons, claims 12-17 are allowable over the proposed Dangelo ‘678 and MPEP’s legal section.

Claim 18 recites that the computer program (which is part of an apparatus adapted to generate integrated circuit designs) is adapted to perform the same three acts amended into claim 12. Thus, for the reasons discussed above with respect to claim 12, Dangelo ‘678 fails to disclose or suggest the three act combination added to claim 18 and Dupenloup ‘123 fails to cure that deficiency. The independent evidence of commercial success (buttressed through the Hakewill Declaration), recognition by others and licensing by others further establishes the non-obviousness of claim 18.

Claim 40 is a system claim that recites three elements in place of several previous elements. The three elements are “an input receiving module that receives one or more inputs from a user for at least one customized parameter of an integrated circuit device, the at least one customized parameter comprising a parameter selected from the group comprising a custom instruction, a cache configuration, a memory interface configuration and a system architecture configuration; a library file receiving module that receives an identification of a location of one or more library files that provide at least one prototype description and at least one extension logic description for the integrated circuit device for which a model is being generated; and a generation module that generates a customized description language model based on at least one customized parameter, the at least one prototype description, and the at least one extension logic description through acts including reading at least one prototype description and modifying the at least one prototype description by substituting values in the at least one prototype description or

merging additional descriptions based on the at least one customized parameter.” Dangelo ‘678 fails to disclose an apparatus that includes a computer program that including modules that perform the functions recited above for the input receiving module, the library file receiving module or the generation module. Again, Dangelo ‘678 does not disclose or suggest a computer program that automates generation of customized description language models based on inputs, nor does it disclose or suggest such a program that does so through the acts recited for the generation module. Dupenloup ‘123 fails to cure the deficiency of Dangelo ‘678 and accordingly, the proposed combination of Dangelo ‘678 and Dupenloup ‘123 fails to render claim 40 unpatentable. In addition, the independent evidence of commercial success (buttressed by the Hakewill Declaration), recognition by others and licensing by others further establishes the non-obviousness of claim 40.

Claim 47 recites the acts of claim 12 and further specifies that at least one parameter includes a processor instruction, cache configuration, memory interface configuration or system architecture configuration. For all of the reasons claim 12 is allowable, claim 47 is also allowable. The deficiencies of Dangelo ‘678 are not cured by either Wirthlin ‘434 or Gupte. In addition, the independent evidence of commercial success (buttressed by the Hakewill Declaration), recognition by others and licensing by others further establishes the non-obviousness of claim 47.

Claim 48 recites the elements of claim 18 and further specifies that at least one parameter includes a processor instruction, cache configuration, memory interface configuration or system architecture configuration. For all of the reasons claim 18 is allowable, claim 48 is also allowable. The deficiencies of Dangelo ‘678 are not cured by Wirthlin ‘434. In addition, the independent evidence of commercial success (buttressed by the Hakewill Declaration),

recognition by others and licensing by others further establishes the non-obviousness of claim 48.

Claims 60-74 have been cancelled.

Claim 75 recites the acts of claim 12 and further specifies that at least one parameter includes a custom instruction, cache configuration or memory interface configuration. For all of the reasons claim 12 is allowable, claim 75 is also allowable. The deficiencies of Dangelo '678 are not cured by Gupte. In addition, the independent evidence of commercial success (buttressed by the Hakewill Declaration), recognition by others and licensing by others further establishes the non-obviousness of claim 75.

Claim 76 recites a method including acts of “providing a user with a plurality of optional inputs, including the ability to generate a customized hardware description language code instruction; selecting at least one of said plurality of optional inputs; selecting at least one cache configuration; defining at least one memory interface; and generating through an automated process a customized description language model based on at least one optional input, cache configuration, and memory interface customized parameter, the automated process including the acts of reading at least one prototype description, modifying the at least one prototype description by substituting values in the at least one prototype description or merging additional descriptions based on the at least one optional input, cache configuration and memory interface, and incorporating any customized hardware description language code instructions.” Dangelo '678 fails to disclose or suggest a process of selecting these various inputs and then “generating through an automated process a customized description language model” based thereon. Again, Dangelo '678 fails to disclose automated generation of such a model and certainly does not disclose or suggest doing so through acts including “reading at least one prototype description,

modifying the at least one prototype description by substituting values in the at least one prototype description or merging additional descriptions based on the at least one optional input, cache configuration and memory interface, and incorporating any customized hardware description language code instructions.” For at least these reasons, claims 76 is allowable over the proposed Dangelo ‘678 and Gupte combination. Moreover, as discussed in greater detail below, evidence of commercial success (buttressed by the Hakewill Declaration), recognition by others and licensing by others attributed at least in part to the elements of claim 76, as amended, is being presented herewith with presents evidence of the non-obviousness of claim 76.

Claim 77 recites a description language model generated using a method that includes the elements added to claim 12 with a few modifications. Specifically, claim 77 recites that the parameters are selected from a plurality of input parameters including at least one extension instruction and a cache configuration. Moreover, claim 77 recites the act of “defining the location of at least one library file” instead of “receiving an identification of a location” For all of the reasons that claim 12 is allowable, claim 77 is also allowable. The deficiencies of Dangelo ‘678 and Dupenloup ‘123 are not cured by Gupte or Wirthlin ‘434. In addition, the independent evidence of commercial success (buttressed by the Hakewill Declaration), recognition by others and licensing by others further establishes the non-obviousness of claim 77.

Claim 78 also recites an act of “generating through an automated process a customized description language model.” In claim 78, the act is based on “at least one optional instruction, the at least one basecase description, and the at least one extension logic description” and the automated process includes “the acts of reading at least one basecase description and modifying the at least one basecase description by substituting values in the at least one basecase

description or merging additional descriptions based on the at least one customized parameter.”

Dangelo ‘678 fails to disclose or suggest the combination recited in claim 78 and Dangelo ‘678’s deficiencies are not cured by Gupte or Wirthlin ‘434. In addition, the independent evidence of commercial success (buttressed by the Hakewill Declaration), recognition by others and licensing by others further establishes the non-obviousness of claim 78.

Claims 79 and 85 recite the acts of “receiving one or more inputs from a user for at least one customized parameter of the microprocessor or microprocessor peripheral; receiving an identification of a location of one or more library files that provide at least one prototype description and at least one extension logic description for the microprocessor or microprocessor peripheral for which a model is being generated; and generating through an automated process a customized description language model based on the least one customized parameter, the at least one prototype description, and the at least one extension logic description, the automated process including the acts of reading at least one of the prototype descriptions and modifying the at least one prototype description by substituting values in the at least one prototype description or merging additional descriptions based on the at least one customized parameter.” As described above with respect to claim 12, Dangelo ‘678 and the other cited references fails to disclose or suggest that combination and the independent evidence (buttressed by the Hakewill Declaration) submitted established non-obviousness. In addition, claim 85 recites the step of using the model in testing and then generating a second customized description language model based on input of one or more inputs for a customized parameter. For at least this additional reason claim 85 is allowable over the art relied upon by the Office Action.

As mentioned above, Applicants have amended claims 91, 97, 102, 104 and 106 to incorporate the features of dependent claims 94, 100, 103, 105 and 107 without prejudice or

disclaimer of any right to reassert original claims 91, 97, 102, 104 and 106 in a continuation application.

At present, however, claims 91 and 97 recite an apparatus that includes the following elements: “an input module that receives one or more inputs from a user for at least one customized parameter of the microprocessor or microprocessor peripheral; a library file module that receives an identification of a location of one or more library files that provide at least one prototype description and at least one extension logic description for the integrated circuit device for which a model is being generated; and a description language model generator that generates a customized description language model based on the least one customized parameter, the at least one prototype description and the at least one extension logic description through an automated process that reads at least one prototype description and modifies the at least one prototype description by substituting values in the at least one prototype description or merging additional descriptions based on the at least one customized parameter and wherein the customized description language model includes both functional and structural description language descriptions for the microprocessor or microprocessor peripheral.” Again, these modules are not disclosed or suggested by Dangelo ‘678 or the other cited references. The evidence of non-obviousness (buttressed by the Hakewill Declaration being submitted herewith) further supports a finding of non-obviousness.

Also, claim 87 recites a module that enables testing of the model through a feedback module and then the “input receiving module enables the user to input an identification of one or more input for at least one customized parameter and the description language generator generates a second customized description language model.” This additional feature is believed to distinguish further over the art of record.

Applications have four sets of independent claims directed to various testing features. For example, claims 102 and 104 recite “generating through an automated process test code associated with the customized description language model wherein the customized description language model includes both functional and structural description language descriptions for the microprocessor or microprocessor peripheral.” Also, claims 106 and 108 recite “a test code generator that generates through an automated process test code associated with the customized description language model based on the at least one customized parameter.” It is asserted that this additional feature is not disclosed or suggested by Dangelo ‘678 or the other cited references. The evidence of non-obviousness (buttressed by the Hakewill Declaration being submitted herewith) further supports a finding of non-obviousness.

Evidence of Long-Felt Need, Commercial Success and Industry Recognition of the Claimed Features Supports Non-obviousness

With its previous response, Applicants submitted a Declaration of Peter Hutton under 37 C.F.R. § 1.132 (“Hutton Declaration.”) describing the commercial success of Applicants’ commercial product that practices features of the claimed inventions. In the Office Action of July 15, 2004, the Examiner requested additional information that is being supplied with the Hakewill Declaration.

In particular, the Examiner requested user manual information for ARC and dates associated therewith. The documents being provided are dated in the 1998/99 time frame, within the time period of the one year bar prior to the October 1998 provisional filing.

The Hakewill Declaration establishes a nexus between the claimed inventions and the commercial success demonstrated in the Hutton Declaration in the detailed claim charts shown.

Accordingly, the Office’s request to provide a user manual is met by the documents made Exhibits to the Hakewill Declaration. Moreover, the Office’s request for additional information

tying the commercial success described in the Hutton Declaration is met through the analysis provided in the Hakewill Declaration.

If the Office required any additional information, Applicants would appreciate a call to discuss what would further the Office's evaluation.


CONCLUSION

Applicants assert that all pending claims are allowable over the art of record and therefore this application is in condition for allowance. Applicants therefore respectfully request that the Examiner allow these claims and pass the application to issue.

If there are any other fees due under 37 C.F.R. §§ 1.11 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fee to our Deposit Account No. 50-0206.

If the Examiner has any remaining informalities to be addressed, prosecution can be expedited if the Examiner contacts the undersigned attorney for a telephone interview to discuss resolution of such informalities.

Respectfully submitted,

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